



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,732	11/20/2003	Ronald Shinogle	98-366.1	8705

719 7590 06/07/2004

CATERPILLAR INC.
100 N.E. ADAMS STREET
PATENT DEPT.
PEORIA, IL 616296490

EXAMINER

GIMIE, MAHMOUD

ART UNIT PAPER NUMBER

3747

DATE MAILED: 06/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/717,732

Applicant(s)

SHINOGLER, RONALD

Examiner

Mahmoud Gimie

Art Unit

3747



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14 and 21 is/are rejected.
- 7) ☒ Claim(s) 15-20 and 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Status of Claims

1. Claims 1-13 have been canceled per applicant's preliminary amendment.
2. Claims 14-22 are pending in this application.

Claim Objections

3. Claims 15-20 and 22 are objected to under 37 CFR 1.75(c) as being in improper form because they depend on one or more of canceled claims 1-13. See MPEP § 608.01(n).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 14 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Verner (4,972,293).

Verner discloses a method for determining a performance characteristic of a fuel injector located in an engine having a plurality of fuel injectors, comprising the steps of: performing a series of speed/acceleration (col. 2, ll. 54) tests under certain load conditions, determining a deviation (off-set) in actual quantity (col.2, ll. 56) of fuel injected from an expected quantity of fuel injected in response to the acceleration tests;

Art Unit: 3747

performing a series of varying load (col. 2, ll. 54) condition tests; and determining a quantity of fuel injected under varying load conditions in response to the varying load condition tests.

Verner does not clearly teach performing a series of acceleration tests under no load conditions. Nevertheless, Verner teaches that the ECU generates various pulse width signals that will generate actual fuel injection quantities to be compared to the nominal fuel injection quantities for determination of error or deviation under certain load conditions (implies idling or no load conditions).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to recognize that the ECU can generate a pulse width signal in a no load condition to determine an error or deviation from the nominal fuel injection quantity as suggested by Verner. The motivation to do so would have been to optimize the fuel delivery, col. 1, and ll. 40-44.

With regard to claim 21, one way to decelerate is applying brakes.

Therefore, It would further have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Verner by recognizing that one possible deceleration technique is applying brakes. The motivation to do so would have been to test the functionality of the brakes while conducting performance tests.

Allowable Subject Matter

3. Claims 15-20 and 22 are objected to as being dependent upon a rejected base claims, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion


4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited references show fuel injection systems.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mahmoud Gimie whose telephone number is 703-305-1037. The examiner can normally be reached on 7 a.m. -3:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Yuen can be reached on 703-308-1946. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

M Gimie


MAHMOUD GIMIE
PRIMARY PATENT EXAMINER
ART UNIT 3747